

COMFORTABLE EARPHONE CUSHIONS

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ABSTRACT

- A cushion for a headset earphone comprises a resilient ring having opposite input and output faces, and a through-opening defining an interior surface between the two faces. The input face has structure for acoustically coupling the opening to an output face of an audio speaker, and the output face is resiliently conformable to a lateral face of an external ear of a listener, thereby acoustically coupling the opening, and hence, the speaker, to the listener's ear. The interior surface of the cushion can be configured to effectively match the acoustical impedance at the output face of the speaker to the acoustical impedance at the entrance of the listener's ear. In one possible embodiment, the ring is formed of an elastomer filled with microcapsules containing a material capable of an endothermic phase changes at a constant temperature, such that the cushion more effectively conducts heat away from the ear, thereby providing long term listening comfort. In another embodiment, the through-opening is acoustically coupled to the output of the transducer with an acoustic plug such that the cushion is flexibly articulated about the plug relative to the speaker, thereby enabling the cushion to comply more easily to the listener's ear using lower contact forces between the cushion and the ear.

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